

end, said closed distal end being substantially the same size as said pin and said slot being narrower than said pin, thereby to provide the positive axial interengagement with said pin.

REMARKS

Claims 1 and 31 have been amended to, among other changes, recite that the anchor includes an element which is configured for positive axial interengagement with a corresponding element of the driver. Some dependent claims have been amended for consistency with claims 1 and 31, and claims 43-48 have been added.

One general aspect of this invention features a suture anchor which is readily and reliably attached to and detached from a driver during insertion into bone. This is accomplished by providing the suture anchor with an element configured to positively axially interengage with a corresponding element of the driver. Claim 1 recites this aspect of the invention in terms of the suture anchor; the combination of the suture anchor and the driver is recited in claim 31.

The axially interengaging elements of the suture anchor and the driver are, for example, an opening in the suture anchor which receives a projection on the driver (or vice versa), as recited in various dependent claims. In either case, the positive axial interengagement between the driver and the suture anchor helps ensure that the anchor is securely held on the driver during insertion into the body, while also allowing the driver to be disengaged and withdrawn after the anchor has been emplaced. If desired, the interengagement can be sufficiently

strong to allow the driver to be used to remove the anchor from the bone (see claim 44), which is a particularly useful feature when the suture anchor is being used to test the isometric position of a replacement ACL rather than for permanent placement.

The claims of the parent application (Serial No. 08/091,092) were rejected over Gatturna and Hayhurst in the examiner's action dated February 1, 1995,¹ but neither patent provides a clue to having an element of a suture anchor positively axially interengage a corresponding element of a driver, as recited in claims 1 and 31.

Instead, Gatturna's anchor is held in place within the driver by a sliding frictional fit of barb 115 within a slot 635 of cannula 110 -- there is no positive axial interengagement between these elements. With regard to the anchor shown in Figs. 14A, 14B, and 15, Gatturna states:

Suture anchor 105 is then attached to the distal end of the installation tool by fitting the suture anchor's barb 115 into the installation tool's slot 635 and pressing the top surface 125 of the suture anchor flush against the installation tool's bottom surface 620. It will be appreciated that in view of the relative dimensioning of the suture anchor and the installation tool... barb 115 will make a snug fit in cannula slot 635, the fit being snug enough to hold the suture anchor attached to the bottom end of the cannula. (Col. 7, line 66 - col. 8, line 9.)

¹ For the record, applicants note that while claims 21, 22, and 42 were listed as "rejected" on page 1 of the action, the art was not applied to these claims.

Although the anchor shown in Figs. 25 and 26 has a reduced diameter upper portion 112A which is received by the cannula, this anchor likewise is retained in the cannula simply by a sliding frictional fit:

In operation, suture anchor 105A and installation tool 605 operate in the manner previously described with respect to suture anchor 105 and tool 605, except that receipt of the suture anchor's upper portion 112A within tool cannula 610, and engagement of the cannula's flat end surface 620 with suture anchor shoulder 113A, yields a more stable engagement between the suture anchor and the suture anchor installation tool during deployment of the suture anchor in bone. (Col. 11, lines 44-51.)

Thus, far from providing the claimed positive axial interengagement between the anchor and driver, in Gatturna the anchor can be easily displaced axially relative to the driver merely by exerting sufficient axial force to overcome the friction fit.

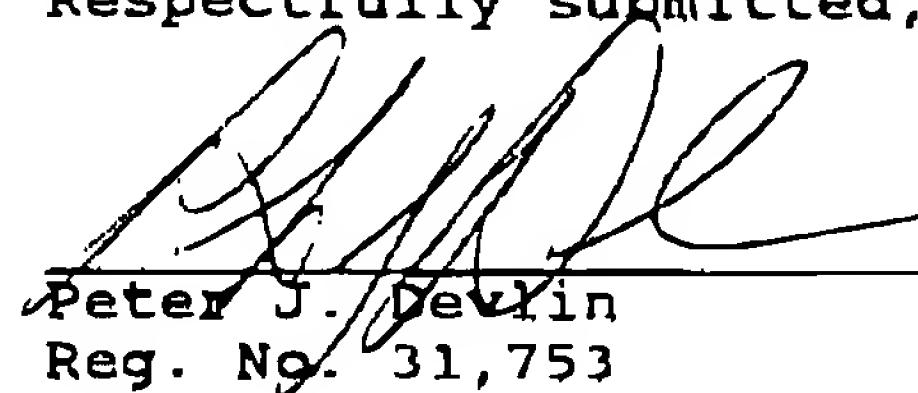
Hayhurst adds nothing regarding any interengagement between the anchor and driver. Indeed, as to the connection between the anchor and driver, Hayhurst simply states that "[t]he bone anchor 10 is pushed into the bore hole 36 by a rigid probe or a specialized insertion tool" (col. 3, lines 53-54).

Applicants submit that all claims are in condition for allowance and respectfully request this action.

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Respectfully submitted,

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